

having the anterior half of the second dorsal fin replaced by a pad of fat, from which the rays gradually emerge behind; the anterior portion does not contain any rays. It is therefore impossible to give an exact number of dorsal rays. The anal fin is composed of about eighty-five rays. The nasal barbel extends to the origin of the dorsal fin; none of the others reach beyond the extremity of the pectoral. The eye is one-seventh of the length of the head. Entirely black.

Cape York, Nicol Bay. 6 inches long.

*Neosilurus Hyrtlii* (Steindachner), from Rockhampton, is evidently closely allied to this species.

73. *Exocoetus atrodorsalis*, sp. n.

D. 8-9. A. 10. L. lat. 35.

Closely allied to *E. hillianus*. The pectoral extends to the end of the dorsal. The ventral fin is scarcely nearer to the root of the caudal than to the end of the snout, extending to the origin of the anal. Dorsal fin elevated, its longest anterior rays being as long as the head; it commences in front of the anal. Upper pectoral rays blackish, lower whitish; dorsal fin entirely black.

Cape York. 5 inches long.

74. *Hemiscyllium trispeculare* (Rich.).

Turtle Island, Cape York.

75. *Crossorhinus tentaculatus* (Ptrs.).

Adelaide, Cape York.

76. *Triænodon obesus* (M. & H.).

Red Sea, Aneiteum.

77. *Trygonorhina fasciata* (M. & H.).

? New South Wales (Krefft).

---

ADDENDUM.

*Holacanthus Duboulayi*, sp. n.

D.  $\frac{11}{23}$ . A.  $\frac{3}{20}$ .

Allied to *H. mesoleucus*. Scales small. Præopercular spine with a scarcely perceptible groove, reaching to the vertical from the hind margin of the operculum. Dorsal and anal fins rounded posteriorly. Head with the anterior part of the trunk yellowish, which colour is sharply defined from the remaining brown portion. A very broad brown ocular band, broader than the eye,

descends from the neck to the ventral fins. The brown portion of the body coarsely reticulated with yellowish, the lines descending from the back to the belly. Caudal fin and a cuneiform band along the hinder half of the base of the dorsal yellow.

North-west coast of Australia (Duboulay).

IX.—On the Shell-structure of *Spirifer cuspidatus*, and of certain allied Spiriferidæ. By WILLIAM B. CARPENTER, M.D., F.R.S.

To the Editors of the *Annals of Natural History*.

GENTLEMEN,

Being now in a condition to give a complete and explicit reply to the question raised by Mr. Meek, on which I addressed you six months ago (*Ann. Nat. Hist.* Jan. 1867, p. 29), I take the earliest opportunity of communicating to you the results of my researches, which will be found, if I mistake not, of singular interest to such palæontologists as pay special attention to the *Brachiopoda*.

I think it due both to Mr. Meek and to myself to point out that the note in the 'Annals' for August, 1866 (p. 144), in which he is represented as calling in question the accuracy of my original observations on the imperforate structure of the shell of *Spirifer cuspidatus*, did not correctly express his views. In a letter with which he favoured me immediately on reading my previous communication he says:—

"I am sorry you had not seen my little paper before you read the notice of it to which you allude. If you had done so, I am sure you would have at once seen that I made no attempt whatever to cast doubts upon the accuracy of your investigations. I never for a moment questioned the fact that the shells examined by you are not punctate. The only question with me, after seeing, as I believed, very minute and very scattering punctures in the shells I had examined, was, whether there might not be in Ireland, and possibly in England, another rare type, not seen by you, indistinguishable by form and other external characters from *S. cuspidatus*, and yet widely separated by having a punctate structure. Believing that this might be the case, and knowing that, if so, it would be a matter of some interest to know which was the true *cuspidatus*, I published my remarks mainly in order to cause further investigations.

"As you have doubtless ere this seen my little paper, you must have observed that the words 'contrary to the opinion of Dr. Carpenter,' quoted by you, do not occur in it, nor any others